

**REMARKS**

By this amendment, the applicant cancels claim 1 and adds claims 5-10 for examination. Therefore, on entering this amendment, claims 5-10 are all the claims pending in this application.

The title and the drawings have been objected to.

The drawings have been objected to because of various informalities.

Claim 1 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Applicants' admitted prior art in view of Ramsden (U.S. Patent No. 4,982,155).

The Applicants respectfully traverse the rejections and request reconsideration.

***Formal Matters***

**PCT Search Report**

The Examiner has requested the Applicants to provide a copy of the international search report for the corresponding PCT application PCT/JP02/01167. The Applicants respectfully submit that a copy was in fact submitted with the original Application. The Applicants include an additional copy of the search report for the records. It should be noted that the corresponding references were submitted as part of an IDS filed August 14, 2004.

**Objections to the Title**

The Applicants respectively amend the title to overcome grounds for its objection.

**Objections to the Drawings**

The Applicants submit revised drawings and/or amend the Specification as needed to overcome grounds for the objections raised by the Examiner.

***Claim rejections under 35 U.S.C. § 103(a)***

Claim 1 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over applicants admitted prior art in view of Ramsden (U.S. Patent No. 4,982,155).

Claim 1 has been deleted, rendering its rejection moot.

***New Claims***

Claims 5-10 are presented for Examination. A skilled artisan would not have been able to make the invention recited in claims 5-10 from the combined teachings of the admitted prior art and Ramsden. Specifically, the combined teachings of the admitted prior art and Ramsden do not suggest current terminals of the four magnetic sensors to be connected to each other in a series connection.

***Conclusion***

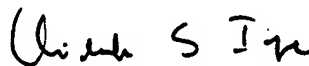
In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Amendment under 37 C.F.R. § 1.111  
U.S. Application No.: 10/640,628

Attorney Docket No.: Q76985

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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WASHINGTON OFFICE

**23373**

CUSTOMER NUMBER

Date: October 13, 2004

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP02/01167

A. CLASSIFICATION OF SUBJECT MATTER  
Int.Cl<sup>7</sup> G01B7/30, G01D5/14

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl<sup>7</sup> G01B7/30, G01D5/14

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho	1922-1996	Toroku Jitsuyo Shinan Koho	1994-2002
Kokai Jitsuyo Shinan Koho	1971-2002	Jitsuyo Shinan Toroku Koho	1996-2002

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 2001-33277 A (Yasukawa Electric Corp.), 09 February, 2001 (09.02.01), Full text; all drawings (Family: none)	1-4
Y	JP 2-174547 A (Matsushita Electric Works, Ltd.), 05 July, 1990 (05.07.90), Page 2, upper right column, lines 8 to 16; Fig. 1 (Family: none)	1-4
A	JP 63-305783 A (Mitsubishi Electric Corp.), 13 December, 1988 (13.12.88), Page 1, right column, line 11 to page 2, upper left column, line 5; Fig. 7 (Family: none)	1-4

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* "A" Special categories of cited documents; document defining the general state of the art which is not considered to be of particular relevance	"I" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier document but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search  
14 May, 2002 (14.05.02)

Date of mailing of the international search report  
28 May, 2002 (28.05.02)

Name and mailing address of the ISA/  
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

Form PCT/ISA/210 (second sheet) (July 1998)

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Amendment under 37 C.F.R. § 1.111  
U.S. Application No.: 10/640,628

Attorney Docket No.: Q76985

**AMENDMENTS TO THE DRAWINGS**

The attached three (3) sheets of drawings included the following changes:

In Figures 4-6, the "Prior Art" label is added.

Attachment: Replacement Sheets